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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/963,441	09/27/2001	Jun Kamatani	684.3257	8786

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NEW YORK, NY 10112

EXAMINER
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THOMPSON, CAMIE S

ART UNIT	PAPER NUMBER
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1774

DATE MAILED: 06/09/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

A-96

**Office Action Summary**

Application No.

09/963,441

Applicant(s)

KAMATANI ET AL.

Examiner

Camie S Thompson

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-- **Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 11 and 12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5 ✓                      6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Election/Restrictions*

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-10, drawn to an electroconductive device and electroluminescence device, classified in class 428, subclass 690.
  - II. Claim 11, drawn to a process for producing the electroconductive device, classified in class 250, subclass 462.1.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, a electroconductive device can be made by using a triarylamine in the organic light emitting layer.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Scott Malpede on January 29, 2003 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-10. Applicant in replying to this Office action must make affirmation of this election. Claim 11-12 withdrawn

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from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

#### ***Claim Objections***

6. Claim 3 is objected to because of the following informalities: Claim 3 should be dependent on claim 2 rather than claim 1 because claim 2 recites the formula (1) for the organic compounds. Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

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10. Claims 1-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Arai, U.S. Patent Number 6,249,085.

Arai discloses an organic electroluminescence device comprising two opposed electrodes and an electroconductive layer, which is a conduction path for blocking electrons as per instant claim 1 (see abstract). Also, the reference discloses that the organic layer interposed between the two opposing electrodes comprises a conjugated polymer or a mixture of a conjugated polymer or copolymer with other suitable polymers as per instant claim 1 (see column 3, line 17-column 4, line 59). Arai discloses that the conjugated polymer can be a substituted phenylene copolymer wherein the substitution can be an alkoxy or alkylthio group as per instant claim 2 (see column 10, line 47-column 11, line 46). Additionally, Arai discloses that the Ar group in the formula can be represented by a biphenylene group as per instant claims 3 and 4 (see column 12, lines 16-49). The mixture of a conjugated polymer such as biphenylene would be structural isomers as per instant claim 1. Column 12, lines 16-25 of the reference disclose that the connected ring structure can be represented by a naphthalenediyl or pyridine-diyl as per instant claims 5 and 7. Arai discloses that the conductive layer consists of electron injecting and transporting compounds that may be quinoxaline derivatives as per instant claim 6 (see column 18, lines 22-29). It is disclosed in the reference that the hole injecting and transporting layer, which makes up the conductive layer is in an amorphous state as per instant claim 8 (see column 17, lines 28-29). Column 3, lines 15-55 and Figure 2 of the reference discloses that the device comprises an electron injection layer disposed between two opposing electrodes – hole injecting electrode and electron injecting electrode and the electron injection layer carries negative charge as per instant claims 9 and 10.

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al., U.S. Patent Number 5,540,999.

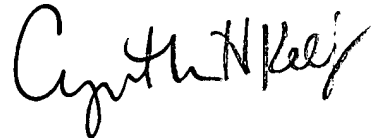
Yamamoto discloses an electroluminescent element comprising two opposing electrodes and an electroconductive layer that comprises a mixture of a hole-injecting compound and electron injection compound as per instant claims 1 and 9-10 (see column 3, line 45-column 5, line 5). The mix layer is typically the light-emitting layer as per instant claim 1 (see column 5, lines 6-17). The reference also discloses that the polymers of the mix layer are in an amorphous state as per instant claim 8 (see column 5, lines 49-59). Column 15, lines 56-67 of the reference discloses that the carrier layer is created in the mix layer, which includes the electron injection layer as per instant claims 9 and 10. The reference does not disclose that the mixture contains mutually structural isomers as per instant claim 1. The reference does disclose that the hole injection layer and electron injection layer can have the same polymer as per instant claim 1. Mutually structural isomers allow the mixture to have a 1/1 ratio, which affects the emission life of the device. Therefore, it would have been obvious to one of ordinary skill in the art to have mutually structural isomers in the conductive layer of the Yamamoto device in order to obtain luminous efficiency as shown by the reference in column 3, lines 46-68).

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Any inquiry concerning this communication or earlier communication from the examiner should be directed to Camie S. Thompson whose telephone number is (703) 305-4488. The examiner can normally be reached on Monday through Friday from 7:30 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly, can be reached at (703) 308-0449. The fax phone numbers for the Group are (703) 872-9310 {before finals} and (703) 872-9311 {after finals}.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

CYNTHIA H. KELLY  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700

A handwritten signature in black ink, appearing to read "Cynthia H. Kelly", is written over the typed name and title.